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DESCRIPTION OF AN ANENCEPHALOUS FŒTUS WITH UNUSUAL MALFORMATION.

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THE specimen was sent by Dr. Charles W. Parsons, of Providence, R. I., with the following account of the case:—

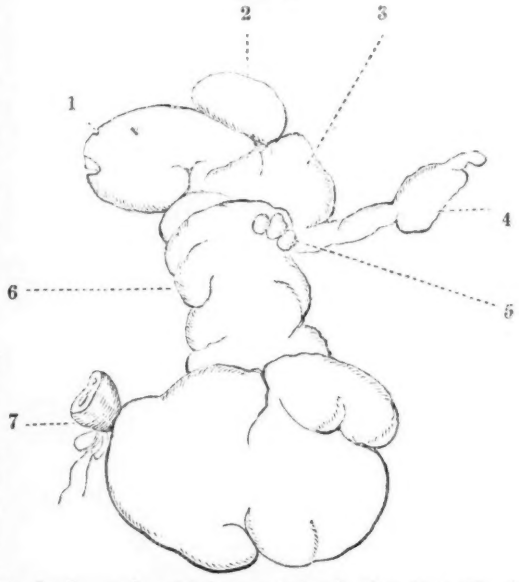
A young Irish woman was delivered of her first child on the 11th of October last. There was nothing abnormal in the labor. In delivering the placenta, Dr. P. noticed a harder substance adhering to it. There was no unusual hæmorrhage. The placenta came into the vagina by the efforts of the uterus, and was delivered about twenty minutes after the child. A hard substance was attached to one edge, and covered by the same amnion. The parts tied by a small string ran directly to the umbilical cord, a vein being distinctly seen running from that place along the fœtal surface of the placenta to the cord. The cord was attached somewhat to that side of the centre of the placenta. Towards the same edge of the placenta was a cyst containing what appeared to be rudiments of an ovum. About half an ounce of liquid flowed from the cyst. The specimen was easily detached, and seemed to have no organized connection with the placenta, except through this quasi umbilical cord and the membranes.

The general appearance of the fœtus will be understood by reference to Fig. I. It measured about three inches in each of its two principal diameters. The head, which was very ill defined, was covered by a thin cuticle; the lips scarcely projected, and were drawn tightly over the jaws, leaving the upper one slightly exposed; there was only a single small nostril (1), which opened into a single nasal cavity having no connection with the mouth; in the place of the eyes were two foldings of the skin inwards, provided with eye-lashes, but covering neither the coats nor humors of an eye. There were nei-

ther ears nor outer ear-openings; on the right side, near the place of the ear. were two vertical slits, somewhat resembling bronchial fissures, which, however, only extended through the integuments. The head was surmounted by an oval sac (2) containing disintegrated cerebral substance; the floor of the sac was formed by the base of the cranium.

Behind, and not easily distinguished from the head, was a fleshy and somewhat solid mass (3), supporting a rudimentary limb (4), which ended in an imperfectly formed foot provided with a single toe. Near the base of this limb were three conical tubercles (5), which looked like rudiments of toes, though they contained neither bone nor cartilage.

Fig. I.



To the under side of the body thus formed, there hung a large pedicle (6), the only part of the fœtus covered with normal skin, which supported a rounded mass, to which the umbilical cord (7) was attached, and which contained the intestinal canal.

Cranium.—All of the bones were greatly deformed; the upper and lower jaws were co-ossified into a single piece (Fig. II., 1). A triangular groove, the trace of an intermaxillary suture, marked the outline of a single intermaxillary bone, and this contained a single incisive alveolus. A series of small and irregular bones occupied the places of the frontals, lachrymals and malars; there were no nasals. A wide opening existed in the cranial vault between the two parietals (2) and the occipital (3). The base of the cranium was made up chiefly of two nearly spherical petrous bones, that on the right side having an internal auditory opening. After the soft parts were removed an opening was made between the nostrils and the back part of the mouth.

Pelvis and limb.—The mass previously mentioned (Fig. I., 3) contained two pieces of bone, one of which was obviously an ilium (Fig. II., 4), and had loosely attached to it, without, however, forming a distinct articulation, a single long bone (5), having an epiphysis at the upper end, and at the other supporting a piece of cartilage con-

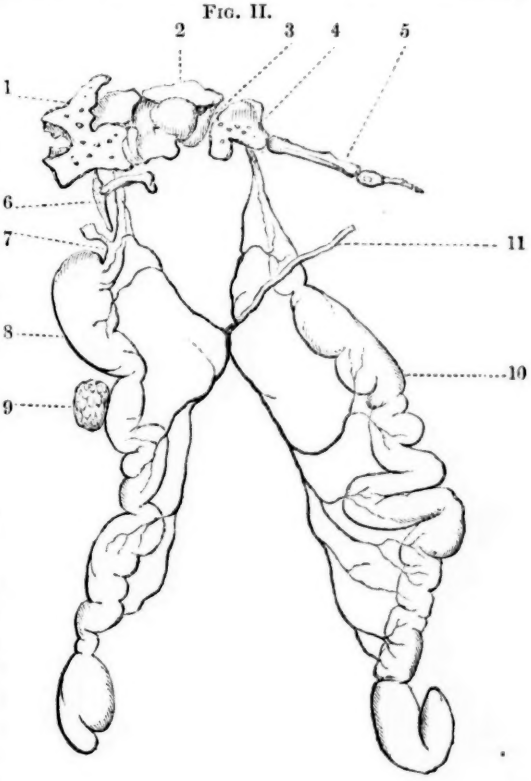
taining a bony nodule, and ending in a single toe with three phalanges.

There were no portions of a *vertebral column*. The *sternum* was represented by a triangular piece of cartilage (6), attached above to the base of the cranium and supporting on either side a pair of well ossified *ribs*.

The bony portions already described were the only parts of a skeleton recognized.

Viscera.—The pedicle and sac attached to the under side of the body contained the following organs:—1st, an œsophagus (7), ending above in a cul de sac which was attached to the base of the cranium; from the fore part of it, near its lower end, grew a fleshy body, supported by a few cartilaginous rings; this was probably the rudiment of a lung: 2d, a well-formed stomach (8): 3d, a portion of intestine ending in a blind pouch; near the pyloric end of this intestine was a lobulated glandular organ (9), in structure resembling a pancreas: 4th, another portion of intestine (10), disconnected with that just mentioned, also ending, both above and below, in a cul de sac; it resembled a colon in structure, and was attached to the pelvis. These two portions of intestine were each about six inches in length, and from the fact that one was connected with the head and the other with the pelvis, it seems probable that they once were parts of a continuous canal which had become separated into two.

FIG. II.



Vessels.—The umbilical cord contained an artery and vein; the latter (11) was much the largest, arose from the two portions of intestine by several branches, which united into a single trunk, form-

ing a cross as they came together from above and below on each side. There was no *heart.*

Genital Organs.—On each side of the umbilicus, and closely connected with the integuments, was a small testis, each having an epididymis, but no *vas deferens.*

All the organs described above were united into a single mass by a fibrinous exudation, and thus the peritoneal cavity was obliterated.

A case in many respects resembling the above is described in Müller's Archives, 1837, p. 328, by Dr. Nicholson.

A specimen described by Otto (*Monstrorum sex centorum Descriptio Anatomica*, Tab. ix., Fig. 2), appears to belong to the same class as the preceding, though the deformity is very much less. The viscera are contained in a large abdominal pouch, the vertebral column is very short and incomplete, the cranium is more perfect, and the four limbs were present, though somewhat deformed.

"POTT'S DISEASE," OR CARIES OF THE SPINE.

[Communicated for the Boston Medical and Surgical Journal.]

CASE VII.*—Carrie, daughter of Mr. C. B. A., of Worcester, 5 years of age. This case was first placed under my care in February, 1862, through the courtesy of Dr. Joseph Sargent, of Worcester. In this case there was both angular and lateral curvature, which had been of more than two years duration. The angular curvature had commenced first, involving the 9th, 10th and 11th dorsal vertebræ; this increased for several months, when the body began to incline rapidly to the right side, producing an extensive lateral curvature, so that the child was obliged to rest the right hand upon the knee in order to support herself; this position—necessary in standing—had rotated the spine upon its axis, so that it was twisted more than one eighth of a circle upon itself, and it was impossible for her to assume the erect position unless supported. The general health had suffered considerably; the patient was easily fatigued by slight exertion, and there was much difficulty experienced from compression of the lungs, so that the difficulty of breathing was one of the most urgent symptoms that demanded relief.

Some months previous to my first seeing the patient, she had suffered from a severe attack of congestion of the lungs, threatening suffocation, which was relieved by the application of a blister over the diseased vertebræ.

The case seemed unpromising from the complicated nature of the deformity, involving both the angular form of curvature—which projected nearly three inches posteriorly—and the lateral curvature, which, though occurring subsequently to the former, produced the

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* Cases V. and VI. were reported July 7th, 1864.

greater deformity; and also the rotation, or twisting of the spine, which is a common accompaniment of lateral curvature. It was with extreme difficulty that an apparatus, adapted to meet these indications, was fitted to the patient; but these difficulties were overcome, and by fitting an apparatus, similar to that used in the preceding cases, both the angular and lateral curvatures were arrested and relieved. The difficulty of breathing was relieved, and the child was not so easily fatigued as formerly. The lateral curvature yielded slowly at first, but afterwards more rapidly, so that at the present time the child has recovered from it entirely, and stands perfectly erect without being supported; the rotation, or twisting of the spine, is almost entirely remedied. Part of the angular curvature still remains, though it has diminished to a considerable extent, and will probably continue to do so, so that eventually there will be but little trace of the original deformity.

I instance this case on account of the complication and extent of the deformity, which has been much greater than in almost any other case that I have met with. This rotation, or twisting of the spine, was first described by Dr. Dods, of Bath, England, in 1824, previous to which time it had not been noticed, or at least no one had described it. It results, unquestionably, from the attempt, on the part of the patient, to restore the equilibrium which has been lost by the inclination of the body to one side, and, to a certain extent, it compensates for the lateral curvature. In many cases, where lateral curvature exists, this rotation of the spine upon its axis conceals, to a great extent, the existing deformity, and the obscure muscular pains are attributed to almost any cause but the true one. Lateral curvature is more frequently met with as uncomplicated with caries, or "Pott's disease" of the spine, and in such cases it is more easily arrested and reduced; as a simple lateral curvature is more amenable to treatment than where it supervenes upon angular curvature, or caries of the vertebræ.

Case VIII.—Clara, daughter of Mr. W. M. C., of Thomaston, Me. I first saw this case in October, 1861. The child was then 5 years of age; there was a prominent angular curvature, involving the 3d, 4th and 5th cervical vertebræ, of two years' duration. There was great deformity of the chest, with the ribs flattened laterally and the sternum projecting quite prominently, producing such a form as is usually found in connection with extensive curvature in the upper portion of the spinal column. As the curvature had increased, the head had settled downward and forward, and rested upon the chest and between the shoulders; there was great incurvation, or hollowing in, of the dorsal and lumbar vertebræ. She was emaciated and prostrate, with all the nervous symptoms usually attendant upon such cases. There was much difficulty of breathing, and the almost constant neuralgic pains in the chest had, through the suffering they caused, materially affected the general health. The countenance had

assumed a pinched and anxious expression, such as is usually observed in the advanced stage of chronic disease in children. Any method of treatment seemed attended with difficulty, on account of the extreme nervous irritability which characterized the case. The curvature had been produced by the weight of the head resting upon the diseased cervical vertebræ, and the first indication of treatment was to relieve this pressure upon the point of disease. The deformity of the lower portion of the spinal column required that it should be supported at the same time, both to relieve the existing curvature and to remedy the deformity of the chest, which, to a great extent, caused the difficulty of respiration and threatened still more serious disease of the lungs. An apparatus, similar to that already described, was applied to support the spine and to relieve the chest from the increasing pressure upon the lungs; from this apparatus two steel springs were extended upwards so as to afford support to a collar which encircled the neck, clasping in front, and upon which the head rested, supported mainly by its resting upon the lower jaw and the occiput, or back of the head. This collar afforded efficient support to the head, whilst it interfered but little with its rotary motion or the use of the lower jaw. The extreme nervous irritability of the child was a prominent difficulty to be overcome, but this soon yielded, and firm and comfortable support to the diseased vertebræ was afforded by this method, and the previous symptoms at once began to improve. The pains in the chest were entirely relieved, and she began to improve in her general health; the nervous irritability subsided, and she became as cheerful and pleasant as before the disease commenced.

She had been able to walk but very little before applying the support, but afterwards she soon began to walk with ease, and engaged in the usual sports of childhood with as much zeal and vigor as is usually displayed by children of her age. During the first six months she gained two inches in height, and since then she has grown rapidly and her general health has been perfect. She is free from pain, and the chest is assuming a more rounded and natural appearance. In these cases, where the curvature involves the cervical vertebræ, the symptoms are more severe and the treatment more difficult; although the reduction of the existing curvature is not as marked, still the results of treatment have been as favorable as in other cases where the location of the disease has been lower down.

No. 7 Harrison Avenue. CHAS. H. SPRING, M.D.

A NEW medical school is about to be established in San Francisco, in connection with a private hospital now under the charge of Dr. Toland.—The old school, connected with the University of the Pacific, is flourishing, and new lecture rooms and other accommodations are now being fitted up for its use.

PROF. FERGUSSON'S LECTURES ON THE PROGRESS OF ANATOMY AND SURGERY DURING THE PRESENT CENTURY.

Lecture III.—On Hare-lip and Split Palate.

Mr. President and Gentlemen,—My first formal operation in surgery was for hare-lip in the year 1828. The patient was a youth, seven years old, and, as expected, the result was satisfactory. The gap in the lip was complicated with one in the palate. For thirty-six years at least, then, my attention has been given more or less zealously to these subjects, and from what I have observed during that considerable period, I fancy that my experience has been on both as much as that of most men in this country. During that time I have seen many hundreds of both kinds of cases, and being about to frame a lecture for the present occasion, the question naturally arises—Have I anything new to say? I have, in a manner, exhausted the subjects, as far as my knowledge goes, in my clinical teaching; but as a number of years have elapsed since I published either cases or observations, I believe that I cannot do better than refer to them both, and whilst recapitulating some principal points, bring forward such others as may, to you, appear in some degree novel.

To begin with hare-lip, I may state that there is no such resemblance to the lower animal in the human subject. The fissure in that animal is invariably in the mesial line; in man it never is.* Of the many which I have seen, I have never met with an instance of the kind. Whether there has been one or two—a single or a double fissure—the defect has always been on one side or both, and when it has extended to the alveolar ridge, it has also appeared in one side or both, whilst the mesial line, both in bones and soft parts, has been in a manner perfect.

There is great variety as regards the mesial part of the lip. Often it is slender in all dimensions, and does not extend to the prolabium or free margin. In other instances it is of fuller dimensions in all respects. In many examples of double fissure the central portions are apparently thrust forward, and seem of extraordinary development; but these features, as also the flat alæ and expanded nostrils, I am inclined to attribute chiefly to defective bulk in the lateral portions of the alveoli. I have no doubt that an erroneous impression has sometimes arisen in this way. Here is a likeness after an operation for hare-lip, showing the cicatrix exactly in the mesial line, and with some this might appear as a direct refutation of what I have stated; but here is the face before an operation was performed, and the gap was large on both sides. It was as marked an instance of cleft under each nostril as could be, and in the operation the middle projection of bone was taken away, whilst the mesial portion of lip was used chiefly to form a columna for the nose. The result is a cicatrix exactly in the mesial line; and thus, I imagine, a most glaring example of the lateral fissures has been supposed to be a positive proof

of defect in the mesial line. I repeat that I have never seen an instance of the kind, whilst I have seen some rare examples of fissure in the face elsewhere, such as in the eyelids, cheeks, and lower lip. In the cheek I have seen a congenital fissure extend from the angle of the mouth to the malar bone; and in another instance, from the angle of the mouth outwards towards the angle of the jaw. In one rare example I have seen a congenital gap in the lower lip extending from near the left angle of the mouth to the base of the lower jaw. It is the only instance of such congenital malformation that I have seen. It was amenable to operation, and the gap was accordingly closed.

In the worst cases of this malformation, where there is fissure through the alveoli as well as the lips, the central portion usually presents difficulties to the satisfactory accomplishment of an operation, and it has often been a nice question, what should be done either as to retaining or removing the part. In some rare cases there is no protrusion beyond the ordinary line, but in the majority, even if there be only a single gap, there is a projection forwards which may seriously impede the just approximation of the edges at, or soon after, an operation. Before deciding such a question, it might seem highly advisable to know what this part really is, and what may be its apparent importance. The most striking way in which I can bring the subject before you is to take the example of double fissure in the alveoli. Now whether the central part projects forward or not, there is a round knob like the tip of a finger or thumb, according to age, which is familiarly known as the intermaxillary portion, bone or bones; and while it has usually been referred to as single, it has also been spoken of as analogous to the pre-maxillary bones in animals of a lower grade. Some foreign histologists, as Von Ammon and Vrolik, have displayed great research on this subject; but I know of no more minute anatomy in the English language than that in my own work on Surgery. There it was shown that this projection consisted of two portions of bone joining in the middle under the columna nasi, as in the normal junction of the superior maxilla. The first specimens which I had of this were procured by clipping the projection off during the operation, at its narrow neck above, in the line of the vomer. I have subsequently examined more entire specimens procured from the dead body, and found that the united portions forming the projection extend upwards and backwards by a narrow neck until they join by a kind of symphysis with the lower and front end of the vomer. This junction is far behind the line where the operator would cut the neck of the projection.

When the palate is split, as it very generally is in the double fissure through the alveoli, the vomer sometimes has its only support below in the intermaxillary projection; or, rather, the projection seems to be an appendage to the vomer, for it appears to be supported in its position by that bone, and by the cartilaginous, fibrous, and mucous tissues associated with the septum. Even in the young-

est fœtal human upper jaw it is difficult to detect the distinction between the intermaxillary portions—equivalent to the pre-maxillary bones in lower animals—and the lateral or true portions of this bone; but, curiously, whilst no line of the kind can be traced in the well developed fœtal skull in the front part of the alveolar ridge, the suture remains tolerably distinct in the palatine portion of this bone until a late period of adult life. Here is the line of that distinction; and when there is a malformation or defect of the alveoli in single or double hare-lip it is invariably in this line. In the central portion the two front incisors, deciduous and permanent, are, each at the proper time, usually tolerably perfect. The additional incisor on each side, deciduous and permanent, is generally of imperfect development, or altogether wanting, and, instead of projecting downwards, usually slopes outwards into the fissure. When present, it is often shed at an early period, from decay in its substance, or by actually falling out entire. The canine or eye-tooth generally makes a fair show, and is of tolerable use, although it projects inwards and is rarely to be compared with the normal tooth, or, I might say, the same tooth in the normal jaw.

This intermaxillary portion may be looked upon, practically, as one mass in the deformity now under consideration. It may vary in size—breadth and thickness—and also as regards its prominence, but it is always found in the skeleton as I have represented.

When there is only one fissure in the alveoli, the mesial portion on that side has often a tendency to project forwards, so as to endanger the success of the operation for the remedy of the malformation. In such a case I should consider it best to cut the part away. The blade of a scalpel can readily be passed into the line of junction in the middle, and the division may be effected with the knife if the subject be young. When the fissure is double, it has been proposed to bend the projection back by pressure, or after breaking its narrow neck; but I have noticed, on trying both plans, that the mass has been an impediment to a very satisfactory operation on the lip, and whilst I do not positively object to the occasional use of either of these plans, I give a decided preference to the removal of the projection altogether. If bent backwards, it will probably be at the damage of the vomer and septum; whether bent or broken, the teeth will be thrown on a new plane, and will be likely to project backwards. I have recently heard it proposed to cut out a piece of the narrow neck, so as to let the knob fall backwards into a better place; but if this were done, I should doubt if the knob would not die for want of circulation. Of course, if the part can be preserved in its natural position, that will be best; and if there be any slight projection, that will be gradually remedied by the pressure of the lip after the operation. However wide the gaps in such cases, it is remarkable how they close as years roll on, for in many instances the opposite sides approximate so closely that a fissure will almost

elude observation. I have never seen a complete osseous closure. Close approximation gives strength to this condition of the upper jaw. In early years, when there is no lateral support, the intermaxillary portion and the central incisors must be of little value as regards prehension, incision, or mastication; for the narrow neck and vomer will give but little stability in such acts. Indeed, in making such preparations as these in the infant head, it is difficult when the parts are moist to keep the projection *in situ*.

As to the causes of this defect, whether in the lip or jaw, I have no explanation to offer. I look upon most of the theories on this subject as proofs of how easily even educated men give a loose rein to the imagination. If this be the case amongst ourselves, it is not to be wondered at that amongst the non-initiated, particularly females and mothers, the influence of the imagination is supposed to be sometimes baneful. When we hear of mothers producing boys or girls at will—a "son and heir," for example, or a daughter when the boys become more numerous than the "governor" may think right—then I shall believe in the influence of the imagination. If I may, or dare, venture a theory of my own, I am of opinion that the defect arises from the breed, and that it occurs where there is a predisposition in the parents. I fancy that I can detect this in the features of father or mother, or of both.

Regarding the operation itself, my personal experience extends to between 300 and 400 cases. Prior to 1850 I had kept notes of only a few of such cases. At that date I was asked to operate on one which had baffled the best efforts of Mr. Liston and Mr. Lonsdale, and at the same time to use a spring or truss, to push the sides of the lips forwards—an invention of Mr. Hainsby, the father of the child. The operation proved successful, and I had good reason to be satisfied that the instrument had been efficacious. Since that time I have used a similar appliance in upwards of 250 instances, and consider it far superior to any other means—by straps or otherwise—for drawing the parts together. Particular notes were taken of these cases, some of which are interesting. One hundred and forty-six were males; 153 were on the left side; 53 were double fissure; and no less than 208 were associated with cleft palate. One hundred and sixty-nine of these have been operated on at King's College Hospital.

As to the results, three of these patients have died, seemingly from the proceeding; not from bleeding or shock, but from some child's ailment supervening, such as thrush or diarrhœa. I have never seen a single instance of convulsions afterwards, at any period of life, and I have operated at all ages between a few days old up to thirty-six years. Taking all things into consideration, I am of opinion that the earlier the operation is performed the better; assuredly before teething. I decidedly prefer about the end of the first month. In a simple case and healthy infant, it may be done any time earlier

to within a few hours of birth. If the child is weakly and the gap large, particularly if complicated with split palate, I strongly advise delay for some months until additional strength is acquired, and also that the parts may be pushed closer in apposition by the use of the truss referred to. I have sometimes made babies wear this for many weeks or months before, and have always noticed its great value.

In double fissure I have generally operated on both sides at the same time. Occasionally, however, I have taken first one, and then the other; selecting the simplest first, and performing the second operation a few weeks—possibly months—after. In some of these double clefts the middle portion of the lip has been so scrimp that I have used it for the columna, particularly in instances where the nose has been flat. When it has seemed needful or best to take away the mesial projection, the closure of the gap has always been a very easy matter, but when this part has been prominent, there has often been cause for much anxiety as to the result. The tension of the lip over this part has threatened to be too much for the recent adhesions. In only one instance has there been a total failure of union, and in that I afterwards repeated the operation with success. In several cases there has been serious threatening of non-union by the gap opening an hour or two, or a day or two, after the stitches have been removed. In such instances I have scraped the surface, introduced needles again, and put all up as at first, and thus made the process appear only as one. This method I have rarely seen fail. On one occasion a child was running about eight days after a very successful operation for a single fissure. It unfortunately fell on its face, and at once split the union open. Although eight miles off, it was brought to me within a couple of hours, when I introduced fresh needles, and with the ordinary care the result was as perfect as could be desired.

After trying a variety of lines of incisions, and seemingly cunning devices for adaptation of opposite surfaces, so as to give the best possible appearance to the lip, I confess that, with few exceptions, the old-fashioned straight line, from the root of the cleft to the free margin of the lip, appears to me to be the best. If a notch or irregularity is left in the lip, it arises generally, I believe, from too little having been cut away from the margins of the fissure.

To make sure of a good and easy approximation of surfaces, I strongly recommend a free separation of each side of the fissure from the alveoli. Some have said that the frænum on the mesial side in a single fissure should not on any account be cut. It is often unusually large in such cases, and I say, from my experience, that I see no reason why it should not be cut as readily and freely as any other part of the mucous junction of the lip to the jaw.

To take a refined view of a perfect operation, I have myself found the most difficult part to be that of bringing the opposite sides so

accurately together that the margin between the mucous membrane and skin should meet on a proper level.

The position of the patient and surgeon during the operation deserves some notice. I have often seen the operator sit or stand in front of his patient, and, in general, before the work has been finished, his face and dress have been spluttered over with blood, saliva and mucus. A far better plan is to be behind, or at the side, so that all the annoyance referred to may be avoided. In infancy the head should rest between the surgeon's knees, who should sit; and in the adult the operator may stand behind a chair on which his patient sits, or at the head or side of a table on which his patient is laid. In either of these positions he may escape the unseemly damage to personal appearance to which I refer.

A few of my infantile patients have taken the breast after the operation, but most have been fed by hand, and some modern devices with caoutchouc and bottles have been of great service.

Many of these observations are of no novel character, but possibly the experience which I have had may render them of additional value. It may, perhaps, be thought, that in bringing this minor subject in surgery before you in these lectures, I deal but lightly with my position. You may have noticed that I look upon some of the so-called minor subjects in surgery as being far more important than some imagine; and in extenuation of my present course, I may refer to the circumstance that the illustrious Roux, in writing the experience of forty years of surgical practice, did not disdain this topic, but made it the subject of one of his famous letters to "Cher Lawrence," his equally distinguished and experienced contemporary.

Experience in hare-lip naturally implies some experience in cleft palate, and I hope that I am not taking an additional liberty in placing this subject in association with that already referred to. In further apology I may state that both the surgery and anatomy of cleft palate are entirely of modern date, and within the time to which I have limited the scope of these lectures.

The early history of the operation for cleft palate sounds like a romance. In 1819 a medical student applied to Roux, then one of the surgical luminaries of Paris, with a defect of this kind. Roux pared the edges of the cleft, and brought them together with stitches. Union followed; the palate became like a normal one, and when the youth appeared amongst his former friends, the change in his voice was such that he could scarcely be recognized as the same person.

I doubt if this case, although fairly made public by Dr. Stephenson in his inaugural dissertation on Velo-synthesis, when taking his degree of M.D. in the University of Edinburgh in 1820, produced the full effect on the surgical mind that it should, even when further elucidated in the famous essay by Roux, published in 1825. Possibly the rarity of the condition and the difficulties of the operation led to apathy, and down to the period of Roux's death no one seems to

have had any experience on the subject at all equivalent to his. Like others taking their early surgical lessons in the third decade of the present century, I was attracted by the romance referred to. But I had seen little to absorb special attention. Whilst busy in dissecting-room work, a subject with cleft palate came under notice. At that time, as even now I suppose, few students took the pains to dissect the palate; but it was my fortune to have this one to luxuriate upon. I made a careful dissection of all the muscular apparatus, and came to the conclusion that I had rarely seen it so highly developed, although the palate and throat were small, being those of an aged female. The whole matter fell aside for years. I had performed the operation on the living body, and had heard of others doing so, without success. The subject in a manner slept on this side of the Atlantic, with the exception of the doings of Roux himself; but about 1840 all Europe, in a surgical sense, rang with the brilliancy of Stromeyer's operations for club-foot and Dieffenbach's for strabismus. Tenotomy and myotomy became the fashionable surgical mania, and I bethought me of my former dissection of the cleft palate. For anything that I knew, it was original. I compared it with the normal condition anatomically and physiologically, and then reflected on what I had seen and heard of surgery as applied to this condition by Roux and others. My zeal was further stimulated by a paper by Dr. J. Mason Warren, of Boston, which told of a larger proportionate success by Dr. Mütter, of Philadelphia, and himself, than to my knowledge had yet been attained by any others, not even excepting Roux. On additional reflection, I fancied that I had fallen upon new views in anatomy, physiology, and surgery, and my conclusions were embodied in a paper which was submitted to the Medical and Chirurgical Society of London in December, 1844. That paper was honored with a place in the volume of "Transactions" of the Society for 1845. Its main features went to show how the cleft palate was closed in deglutition by the action of the superior constrictor of the pharynx; how the palato-pharyngei in cleft palate acted differently in this state than in the normal palate, and, instead of closing the opening between the pharynx and the nares, in reality tended to draw the parts asunder—an act which was overbalanced by the vigor of the upper constrictors of the pharynx. Above all, looking to the surgical aspect of the malformation, I gave it as my opinion that the action of the levatores palati probably exercised such an influence on the lateral portions of the palate, after the operation of Roux, as to mar its good intentions. I showed, in as far as one could by reference to the dead and living parts, how the levator muscle on each side had such free and uncontrolled action that, whenever excited, it drew the margin of the cleft outwards and upwards, and so tugged upon the stitches put in by the surgeon that ulceration in their sites and separation of the junction was a most

probable result—that, indeed, which had caused the failure of Roux's operation in so many instances.

The inferences which I drew were, that if the palato-glossus, palato-pharyngeus, and levator palati on each side were divided, the soft flaps would thereafter, for a time, be so relaxed that in all probability the mesial line of adaptation would be so little disturbed that union would take place. The tensor palati I considered would have little disturbing influence, nor did I put much importance on that of the palato-glossus. My impression was, that the action of the levator palati and palato-pharyngeus, particularly that part in the posterior pillar of the fauces, was likely to prove detrimental; and, in accordance with the somewhat normal and already popular practice of myotomy and tenotomy in other directions, I recommended division of these muscles as an adjunct to the ordinary operation for cleft palate.

By modern custom, the department of anatomy associated with the professorship of surgery in this College has been held of comparatively little account, although both my predecessors have displayed remarkable acquirements in this direction, which they have turned to great account in the field of surgery. As professor of human anatomy, I hope that I may not be out of order in claiming to be the first who solved the problem of how the cleft in the soft palate is closed during deglutition. The drawing influence of muscle has been most recognized; the pushing has been less taken into account, although it is very considerable. Swallowing, the vermicular action of the intestines, and defecation, are notable examples of this force, just as palpable in the estimation of the anatomist as the drawing of the biceps in flexing the arm. Anatomy without physiology would be in a manner senseless, but when joined together they give life and soul to surgery. The influence of the constrictor muscles of the pharynx in the process of deglutition was well known to physiologists; but how, during that process, the gap of the cleft palate was closed in vacant space was an enigma, until I had the good fortune to show that the parts are pushed together by the action of the superior constrictor particularly, so that the gap between the pharynx and the nostril is as completely closed during deglutition as if the velum were entire. Then, for the surgical aspect of the investigation, I showed that by temporarily taking off the influence of such muscles as in common action tended to draw the two portions of the soft palate aside, there was a probability of such entire rest that union in the central line was most likely to take place—certainly, at any rate, more likely than with these muscles in full vigor, irritated, too, as they might be by the wounds, by inflammation, and by the presence of stitches. The almost intolerable distress, the depressing influence, the actual danger, associated with the injunction against swallowing laid down by Roux and others, made the early operations

of this kind examples of human endurance which few could follow out to the full extent. Such injunctions had been occasionally disregarded, and Sir Philip Crampton gave some notable examples of this kind. Since I showed, anatomically and physiologically, that during deglutition the parts are actually pushed together, that process is no longer forbidden; and now a fair share of suitable nourishment is freely administered—a matter of great consequence as regards successful issue.

With a single exception, which shall be nameless on such an occasion as this, I am not aware that any anatomist or surgeon of repute has controverted my views as expressed in the paper referred to. Nor need I do more than advert to the amiable and flattering device of a continental admirer bringing them all out anew, a few years after, as if they were his own. I have heard of nothing yet to impugn the anatomical explanation which I first gave of how various hap-hazard incisions might or might not facilitate the approximation and adhesion of the margins of the cleft in the soft palate. The knife for dividing the levator palati was my own device, and it was proposed at the same time, and soon subsequently applied, for the purpose of separating the soft palate from the hard in cases where there seemed a probability of closing a cleft in the hard palate, as well as the soft.

Those who have devoted attention to cleft palate during the last twenty years must have been surprised at a recent dispute as to priority in separating the soft from the hard palate with a view to close the cleft in the hard. Dr. J. Mason Warren described this process in 1843;* and it was referred to in my original paper. I myself performed it in January, 1845, and have since repeated it on all fitting occasions. The late Mr. Avery devoted special attention to this portion of the palate; and after his death the subject was further ably developed by Mr. Pollock in a paper published in the Medico-Chirurgical "Transactions" for 1856. The first idea that I had of this portion of the operation for cleft palate was obtained from Dr. J. Mason Warren. I deem it but fair to the reputation of that distinguished surgeon to state that I know of no originality before his, and that I look upon all modern claims to such originality as arising either from ignorance or a desire to rob the fair reputation of a name which, in son as in father, will stand for generations among the brightest in surgery.

Although working at the subject of cleft palate since the date of my first paper, I cannot pretend to add much that is novel to the views which were then expressed. I have little to add, little to detract, from the anatomy and physiology which I ventured to submit as original. I am still as much convinced that the tensor palati has little or no influence on the soft palate—certainly that it has none to counteract the closing of the cleft. The palato-glossus I am

* New England Quarterly Journal of Medicine and Surgery. April, 1843.

of opinion has no practical influence; and, excepting in rare instances, I am convinced from experience there is no necessity to interfere with the palato-pharyngeus in the posterior pillar. I am equally convinced of the value of dividing the levator palati, for that is the muscle which, by drawing upwards and outwards, separates the edges so as to prevent union or break it up when the stitches are removed.

There is ample experience to show that union has taken place, despite muscular action to the contrary. The experience of Roux and others has proved that. But I know of no experience equal to my own to prove what I contend for—namely, that by taking off muscular action for a time, union can be rendered more certain than by leaving the muscles untouched.

Since I entertained the views referred to, I have operated on 134 cases, and of these 129 have been successful. In two union failed entirely, and in three it was so partial and imperfect that I place them as unsuccessful. Forty-five of them have been performed in hospital practice. In a considerable number an aperture has been left in the hard palate, and much benefit has been derived in many such cases from the use of an obturator. Occasionally there is a round aperture left, with such scanty material that it cannot be closed by operation; but in slits of moderate width, if the roof be wedge-shaped (not horizontal), the soft parts may be separated from the hard, and brought down so as to approximate in the middle, and be held together by stitches until they unite.

I have never attempted the operation in infancy, and consider the circumstances most favorable at or above puberty; but I have frequently operated successfully at ages between ten and fifteen, where patients have been steady and courageous. I have never operated under chloroform, and whilst I do not deny the possibility of doing so, I am of opinion that, as a rule, it is absolutely requisite to have the patient conscious, so that he may facilitate the steps in a variety of ways.

This enumeration includes all kinds of cases, and refers chiefly to the cleft in the soft palate. In many instances of cleft in the hard palate it is utterly impossible to contend against nature; and even in the soft, the parts are occasionally so scanty that there is literally no material to work upon.

In as far as I know, the greatest success recorded before my own views were made public was that achieved by Mütter, of Philadelphia. In 1843 he had operated successfully in nineteen out of twenty-one cases; and J. Mason Warren, of Boston, had been successful in thirteen out of fourteen cases. These instances were of both hard and soft palate. What may have been their after-success I cannot say. It has been related of Roux, since his death, that he had operated on 120 cases, and that of these, one in every three had failed. I attribute Roux's comparative want of success to the circumstance that the levator palati and back part of the palato-pha-

ryngeus were left untouched; and I consider that Warren's success may have resulted from the free incisions which he made through the palate outside the pillars of the fauces. My own success, if I may so call it, I attribute chiefly to the division of the levator palati, and next to the relaxation which the wound for that division involves. For mere relaxation, the incision of Dieffenbach is probably the most perfect. I know that it has been particularly successful in Mr. Skey's hands, and in Mr. Pollock's; but, with all deference, I am still disposed, from all I know of the subject, to prefer a free incision above the soft palate, whereby the levator palati may be divided to a certainty. In addition, I look upon this wound as of great service in this respect—the lymph effused upon it acts as a splint, whereby the palate is kept fixed as a board until union in the mesial line is complete.

As to attitudes in this operation, the patient may sit or lie, as may best suit convenience. Latterly, I have made most use of the recumbent. I find that the head can be kept best on the same line in this position; and as regards my own views on the anatomy and physiology of the parts concerned, I deem the subject of some importance. For instance, if the patient sits with the head slightly thrown backwards, the palato-pharyngei when irritated, pull the soft palate downwards towards the epiglottis, so as to leave a space between the palate and the base of the cranium; but if the head be thrown far backwards the axis of action is altered, and these muscles draw the soft parts upwards, or, in other words, bring the soft palate towards the base of the cranium, and thus add to the difficulties of the surgeon by limiting the space above the soft palate where he has to work with the needles in introducing sutures. Here, as in hare-lip, the surgeon has generally stood before his patient, but I invariably select his right side in preference to all other places.

The grand practical object of this operation is to improve the voice and articulation. Defective deglutition from this malformation is what attracts the mother's or nurse's attention in early life. The cries of infancy are in no wise peculiar in tone; but when definite articulation commences, or rather should commence, the value of an entire palate is then appreciated. The air and sound, in passing outwards from the larynx, escape in part through the nostrils by the split in the palate. A nasal twang is the result, and articulation as in the normal state of the parts is impossible.

Immediately after the operation, the modification on the voice can be at once detected. It is customary to keep those operated on from speaking for eight or ten days. It is, however, a needless restriction as regards my operation. In reality, few care, under the circumstances, to speak at all; yet I do not think that it would do harm. In the course of eight or ten days, when the fever or distress following the operation has gone, the tone of the voice is at once perceived to be changed for the better. Improved articulation, however, comes

more slowly. Years, many years, are required for distinct articulation when the whole organs are to all appearance in perfection; and after the most successful operation for cleft palate, months and years are required to alter defective sounds. Voice and speech have to be modified anew. With some the changes come slowly and sluggishly; but with others they are so rapid and perfect that in a few years the original defect cannot be detected except by a practised ear. —*London Lancet.*

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURDSAY, AUGUST 18, 1864.

INFANTICIDE.—The frequent notice of cases of child-desertion in the morning papers seems to lead to the conclusion that this crime is becoming one of common-place occurrence among us. Taken in connection with the more rare instances of unmistakable violence to newborn infants and the undoubted prevalence of the practice of abortion among all classes of society, it claims our attention as a matter of serious consideration in its relations to great social questions. In point of morality we see no difference in these three varieties of crime, but undoubtedly many a tender-hearted wife exclaims against the wickedness of the poor girl who thus leaves her offspring to the chance mercies of the passer-by to screen herself from a life-long infamy, and yet does not hesitate to destroy the fruit of her own womb before it has seen the light, if nature insists upon her becoming a mother more frequently than she desires. In the one case the whole community is shocked by the heartlessness and depth of depravity thus exhibited, and the law of the land punishes with a just severity those who thus offend the laws of humanity. It is only a few weeks since that two cases of such criminal desertion were brought before the notice of our courts, and the prosecuting officer for the government urged the extent of the punishment authorized by law against the agents in such iniquity, stating that he considered the case really one of murder. The public journals made them the text of much excellent preaching, wisely pointing to the evils which are inseparable from a population in which the female sex is constantly increasing in startling preponderance, as well as to the remedy, which is to be found in the establishment of societies for the encouragement of emigration of women to our western lands, where the proportion of sexes is in an inverse ratio. There are, to be sure, other ways of looking at such questions, and there are States which, caring more for the production of soldiers and laborers than for marriage licenses, prevent the occurrence of such crimes by establishing in convenient localities well-watched turning-tables, where such waifs are received and turned to the public advantage, and no questions asked. We trust, however, that it will be long before such silent corruptors of the public morals will find a place in our land, or that popular opinion will abate its indignation towards this criminal exposure of children.

But, on the other hand, there is another sin of far graver importance and of wider spread, a sin both against nature and the State, and one not recognized by courts of justice or the public press. No one but a physician can be aware of the universal laxity of opinion which prevails in our society in relation to this subject of criminal abortion. It is really astounding to listen to the sentiments expressed by gentle women in relation to their responsibility towards their unborn children. It would seem as if every feeling of humanity were extinguished by the fear of a too rapid increase of family, and fathers look with a blind or favoring eye upon any measure which may prevent what they consider to be a calamity. It is with feelings of real surprise that they are told of the sinfulness of an act which they seem to regard as of no moral importance whatever. Society needs a thorough awakening upon this subject, and it should be brought home to every woman and man in its true light. It should be taught in every school book of physiology, and every public print should reiterate it, that the child is alive from the moment of conception, and that every interference with its being is as much a sin at one period of its existence as at another. No consideration of false delicacy should be allowed to stand between such information and the public, for the increase of our native population and the health of women are both at stake, and solely in consequence of this sinful ignorance. It is a greater evil by far than the former we have been considering, and should be treated in the same public manner.

Unusual Form of Albinism.—*(Klin. Monatsbl. f. Augenh.*, i. 516).—A lady of 45 consulted Dr. Liebreich for an affection of the eye; he was struck with the intensely red glow of the pupils when she entered the room. When the eye was illuminated by the ophthalmoscope, at the first glance the pupils only appeared to be red; further examination, however, proved that the iris also was transparent, as in an ordinary albino: though, owing to its being seen by both reflected and transmitted light, the red from the fundus admingled with the brown hue of the anterior surface. The degree of transparency of the iris may be best recognized by using only transmitted light; thus, by throwing the rays converging from a convex lens on the outer part of the sclerotic, while the eye is turned a little inwards. Thus in the present case, just as in ordinary albinos, not only the pupil but the whole of the cornea appeared of a brilliant red; by throwing the apex of the luminous cone alternately on to the anterior surface of the iris and on to the sclera, and thus examining only by reflected or only by transmitted light, it became clear that the posterior pigment-layer, the epithelium of the iris contained no pigment, whilst the stroma contained an approximately normal amount. In the latter respect the present case differs from the ordinary albino, where the stroma of the iris is also free from pigment, and hence appears white by reflected light. The epithelium of the choroid contained no pigment, and the stroma very little, so that the choroidal vessels could be seen with great clearness; had there not been slight nystagmus, it would certainly have been possible to see the choriocapillaris.—*Ophthalmic Review.*

PROF. LAUGIER, one of the surgeons of the Hôtel Dieu, has recently made a most important communication to the Academy of Sciences. In an operation performed on the arm, and in which the median nerve had been severed, that skilful surgeon united by a suture the two ends of the nerve. Almost immediately after signs of sensibility were observed, and in a few days more the nerve had entirely recovered all its properties of sensation and motion. I need not insist on the importance of this case, which throws such a new light on physiological pathology of the nervous system. Within a few weeks, in a discussion which took place at the Society of Surgery, it was affirmed by several members that the regeneration of the nervous tubes, which alone could cause the recovery of sensibility and motility, was the work of weeks and months, and could not immediately take place. Such, also, was the opinion of M. Brown-Séquard and of MM. Vulpian and Philippeaux. These two gentlemen published last year a memoir which received academical honors, and in which they gave the relation of different experiments they had made, the result of which is entirely opposed to that obtained by M. Laugier.—*Paris Cor. of Lond. Lancet.*

THERE were 138 deaths in Providence during the month of July; 49 *more* than in July, 1863, and 52 *more* than the average for July, during the nine years, 1855 to 1863 inclusive. A large portion of this increase of mortality is due to the large increase in the population of the city, which is now at least 56,000. An examination of the causes of deaths shows a very slight increase in diarrhœa and dysentery as compared with 1863, and no increase in cholera infantum. It also shows a large increase in consumption, pneumonia, scarlatina, and hydrocephalus, diseases which are not peculiar to the season.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, AUGUST 13th, 1864.

DEATHS.

	Males.	*Females.*	*Total*
Deaths during the week - - - - - - - - -	57	58	115
Ave. mortality of corresponding weeks for ten years, 1853—1863,	56.3	51.6	107.9
Average corrected to increased population - - - - -	00	00	118.7
Death of persons above 90 - - - - - - - - -	0	1	1

COMMUNICATIONS RECEIVED.—Cases read before the Middlesex East District Medical Society.—Case of Bronzed Skin, with Disease of the Supra-renal Capsules.—Case of Incised Wound of the Neck.

MARRIED,—At Concord, N. H., Major Robert B. Carswell, Surgeon of the Board of Enrolment in the 2d New Hampshire District, to Miss Anna J. Marshall, of Dunbarton, N. H.

DIED,—In Edgartown, Martha's Vineyard, Aug. 3d, Dr. Stephen Huse, of Methuen, aged 65. Dr. H. was born in Edgartown, but practised in Methuen over thirty-five years.

DEATHS IN BOSTON for the week ending Saturday noon, Aug. 13th, 115. Males, 57—Females, 58.—Abscess, 2—accident, 2—inflammation of the bowels, 2—congestion of the brain, 3—disease of the brain, 5—bronchitis, 1—cholera infantum, 31—cholera morbus, 1—consumption, 6—convulsions, 4—croup, 3—debility, 1—diarrhœa, 5—diphtheria, 1—dropsy, 1—dropsy of the brain, 4—drowned, 1—dysentery, 10—scarlet fever, 2—typhoid fever, 1—hæmorrhage (internal), 1—infantile disease, 3—disease of the kidneys, 1—congestion of the lungs, 2—inflammation of the lungs, 3—marasmus, 1—measles, 1—old age, 1—paralysis, 2—peritonitis, 1—premature birth, 3—smallpox, 2—syphilis, 1—unknown, 7.

Under 5 years of age, 68—between 5 and 20 years, 10—between 20 and 40 years, 16—between 40 and 60 years, 10—above 60 years, 11. Born in the United States, 90—Ireland, 17—other places, 8.